

CLAIMS

1. A device for handling an article (13) such as a coil spring, the device being characterized in that it comprises a body (10) having an internal housing (12) suitable for containing said article (13), said housing (12) presenting at least one open end (10A, 10B) and a constriction zone (14) that is suitable, in a stable state in which said constriction zone (14) presents a reduced dimension (D_{14X}) that is reduced in a first direction (X), for retaining said article (13) inside the body (10), and for being deformed to adopt a deformed configuration enabling said article (13) to be inserted into the housing (12) or enabling said article (13) to be extracted from the housing (12).
- 15 2. A device according to the preceding claim, characterized in that the constriction zone (14) in its deformed configuration is in a state that is unstable.
- 20 3. A device according to claim 1 or claim 2, characterized in that said body (10) is substantially elongate and tubular in shape.
- 25 4. A device according to any preceding claim, characterized in that said constriction zone (14) in its stable state presents a reduced dimension (D_{14X}) in a cross-section (S₁₄) of said body (10).
- 30 5. A device according to any preceding claim, characterized in that said constriction zone (14) in its deformed configuration presents a cross-section (S₁₄) that is substantially circular.
- 35 6. A device according to any preceding claim, characterized in that the constriction zone (14) in its stable state presents two closer-together portions (14A, 14B) along a short dimension (D_{14X}) and two farther-apart

portions (14C, 14D) along a long dimension (D14Y), said two farther-apart portions (14C, 14D) being suitable for being moved towards each other in order to move said two closer-together portions (14A, 14B) apart from each

5 other.

7. A device according to any preceding claim, characterized in that said body (10) has two open ends (10A, 10B).

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8. A device according to any preceding claim, characterized in that said body (10) includes a collar (16) close to at least one open end (10A, 10B) of said body.

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9. An installation for handling an article such as a helical spring, the installation being characterized in that it comprises holder means (22A, 22B, 22B'; 23A) for holding a device (11) according to any preceding claim, 20 and force-application means (24) suitable for acting on said device (11) to deform said constriction zone (14).

10. An installation according to claim 9, characterized in that it further comprises first feeder means (18) for feeding a plurality of devices (11) and second feeder means (20) for feeding a plurality of articles (13).

11. An installation according to claim 9 or claim 10, characterized in that said first feeder means (18) 30 comprise a chute (18) suitable for co-operating with said article (13).

12. An installation according to any one of claims 9 to 11, characterized in that it includes article loader 35 means (26) suitable for inserting an article (13) into a device (11).

13. An installation according to any one of claims 9 to 12, characterized in that it includes article unloader means (28) enabling an article (13) to be extracted from the device (11) in which said article (13) is housed.

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14. A method of handling an article (13) such as a helical spring, the method being characterized in that the following steps are performed:

10 · providing a handling device (11) having a body (10) with an internal housing (12) suitable for containing said article (13), said housing (12) presenting at least one open end (10A, 10B) and a constriction zone (14) suitable, in a stable state in which said constriction zone (14) presents a reduced dimension (D_{14x}) that is reduced in a first direction (X), for retaining said article (13) inside the body (10), and for being deformed to adopt a deformed configuration enabling said article (13) to be introduced into the housing (12) or enabling said article (13) to be extracted from the housing (12);

15 · deforming the constriction zone (14) so that it adopts its deformed configuration;

20 · inserting the article (13) into the body (10) while the constriction zone (14) is in its deformed configuration; and

25 · causing the constriction zone (14) to return to its stable state in which the article (13) is held inside the body (10).

30 15. A method according to the preceding claim, characterized in that in order to extract the article (13) from the device (11), the constriction zone (14) is deformed so that it adopts its deformed configuration.

35 16. A method according to claim 14 or claim 15, characterized in that the constriction zone (14) in its deformed configuration is in a state that is unstable.